Department of Pesticide Regulation

Paul E. Helliker
Director

Gray Davis
Governor

Winston H. Hickox
Secretary, California Environmental Protection Agency

Suggested Permit Conditions for Using 1,3-Dichloropropene Pesticides (Fumigant)

Overview

Date Established	August 7, 2001
Enforcement Letter	ENF 01-40
Distribution	County Agricultural Commissioners
Referrals	If you have any questions pertaining to this document, please contact your Senior Pesticide Specialist Liaison.
Approval	*Roy Rutz for* Scott T. Paulsen Enforcement Branch (916) 324-4100
Background	This Enforcement Letter supercedes Enforcement Letter ENF 01-31. Changes from the previous Enforcement Letter include: an application factor for areas outside the San Joaquin Air Basin, in January or December, and 18 inches or deeper is pending (page 5); eliminating the lower maximum application rate with a tarpaulin (pages 6 and 7); and including maximum application rates when applying by mechanical soil injection for both 94% and 97.5% Telone™ II products (page 7).

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Overview, Continued

Introduction

These suggested permit conditions apply to use of pesticides containing the active ingredient (a.i.) *1,3-dichloropropene* (1,3-D) when applied by both mechanical soil injection and drip application systems.

In addition to the provisions in the *California Food and Agricultural Code* (FAC) and *Title 3, California Code of Regulations* (3CCR), users shall comply with the 1,3-D product labeling and these suggested permit conditions.

When requirements differ, users shall follow the most stringent requirements.

Prohibited Uses

ALL use of 1,3-D in greenhouses is prohibited.

In This Document

This document describes the following topics.

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All Application Methods

Township Limit for All Application Methods

The township (36 square-mile area) limit is necessary to minimize the levels of the amount of 1,3-D in the atmosphere and mitigate the potential for chronic exposure. This township limit is based on the percent of a.i. in different 1,3-D products.

The 1,3-D application rate is determined using a formula expressed as adjusted total pounds (ATP) to ensure that 1,3-D emitted into the atmosphere does not exceed recommended levels. The township limit is necessary to mitigate the potential for chronic exposure to the public.

ATP township limit requirements are as follows:

1. No more than 34,295 ATP shall be applied in January or December of each calendar year within each township.
2. No more than 90,250 ATP shall be applied in a calendar year in each township.

When county or state borders divide the township, the ATP of 1,3-D allowed per calendar year shall be approximately proportional to the area in each political subdivision.

Prior to each application, the permittee shall consult with Dow AgroSciences or their representative to ensure the proposed use does not exceed the ATP of 1,3-D applied in that township within the month or calendar year.

Notice of Intent (NOI)

- The permittee shall provide to the County Agricultural Commissoner (CAC), a valid recommendation from a pest control adviser before the NOI is accepted and the application allowed.
- In addition to the information required in 3CCR section 6434, the following information shall be provided on the NOI:

1. Application depth and type;
2. The total gallons (TG) of the pesticide formulation;
3. The pounds per gallon (lbs./gal) of 1,3-D formulation;
4. The percent by weight of the a.i. expressed as a decimal (.XX);
5. The total pounds (TP);
6. The application factor (AF) appropriate for your application; and
7. The ATP for the proposed application.

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All Application Methods, Continued

Buffer Zones	• The buffer zone shall be a minimum of 100 feet measured from the perimeter of the application block to any occupied residences, occupied onsite employee housing, schools, convalescent homes, hospitals, or other similar sites identified by the CAC. • The buffer zone may extend across roads, highways, or similar rights of way or sites approved by the CAC.
Restricted Entry Interval (REI) for All Application Methods	• Entry by any person (including early entry that would otherwise be permitted by the Worker Protection Standard) other than a correctly trained and equipped handler who is performing a handling task permitted on the label, is prohibited from the start of the application until seven (7) days after the application. • No person(s) shall enter a treated field prior to the expiration of the REI unless he/she meets the early entry requirements in 3CCR section 6771, and wears the personal protective equipment required on the label.

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Mechanical Soil Injection

Mechanical Soil Injection Method

Users shall comply with the following conditions/requirements when applying 1,3-D by mechanical soil injection.

Determining the Application Factor when Applying by Mechanical Soil Injection

The AF is a predetermined numerical value based on the month, depth of injection, and geographic location of the specific application. The AF values are used in the formula to determine the ATP used during the application.

Use the table below to determine the AF:

IF applying the fumigant…	**AND** applied in the month(s) of…	**AND** at depths of…	**THEN,** use the AF of…
Within the San Joaquin Air Basin[1]→	January or December→	Less than 18 inches→	(Prohibited)
Within the San Joaquin Air Basin→	January or December→	18 inches or deeper→	1.9
Within or outside the San Joaquin Air Basin→	February through November→	Less than 18 inches→	1.9
Within or outside the San Joaquin Air Basin→	February through November→	18 inches or deeper→	1.0
Outside the San Joaquin Air Basin→	January or December→	Less than 18 inches→	2.3
Outside the San Joaquin Air Basin→	January or December→	18 inches or deeper→	(currently pending)

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[1] The San Joaquin Air basin consists of Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties.

Mechanical Soil Injection, Continued

Application Rates – Maximum Gallons Per Acre (M gal/A) When Applying By Mechanical Soil Injection

To determine the maximum number of gallons per acre of pesticide formulation (M gal/A):

The gal/A = lbs./A divided by lbs./gal
Divide lbs./A (332) by lbs./gal

- Convert percentage of 1,3-D to a decimal (divide XX% by 100 = .XX);
- To find lbs./gal, multiply lbs./gal x .XX = lbs./gal
- **With or without a tarpaulin**, divide 332 by lbs./gal = gal/A

Because percentages of a.i. differ in various 1,3-D products, the procedures below describe a method to ensure that the township limit is not exceeded. Additionally, this procedure takes into account percentages of 1,3-D a.i. within different formulated products, allowing more gallons per acre (gal/A) when the product has a lower percentage of 1,3-D or less gal/A if the product has a higher percentage of 1,3-D. The formula follows:

1. The gal/A of pesticide formulation shall be based on the number of pounds per acre (lbs./A) of 1,3-D a.i.
   a) **With or without a tarpaulin**, 332 lbs./A a.i. shall be the maximum allowable amount 1,3-D (332 lbs./A a.i.)
   b) See pesticide labeling for detailed rate recommendations and rate calculation instructions.

2. Use the following information to calculate the gal/A allowed for each application:
   a) The pounds per gallon (lbs./gal) for the pesticide formulation;
   b) The percentage by weight of 1,3-D (XX%) in the pesticide formulation, expressed as a decimal (.XX);
   c) The pounds of 1,3-D per gallon (1,3-D/gal) for the pesticide formulation; and
   d) The lbs./A for the application (332).

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Maximum Soil Injection, Continued

Maximum Application Rates when Applying By Mechanical Soil Injection

Use the table below to determine the maximum application rate with or without a tarpaulin. The pesticide product label states that Telone™ II, Telone™ C17, and Telone™ C35 shall be applied by mechanical soil injection only.

NOTE: See product's label for rate ranges. There are presently two variations of Telone™ II in the channels of trade – 94% a.i. and 97.5% a.i. Do not exceed the maximum rate described by permit conditions.

Calculations	**Telone® II**	**Telone® II**
(1) Weight/gallon[2]	10.1 lbs.	10.1 lbs.
(2) % 1,3-D/gallon[2]	**94%**	**97.5%**
(3) Amt. 1,3-D/gallon[3] (3) = (1) x (2)) 100	9.49 lbs.	9.85 lbs.
Maximum Application Rates With or Without a Tarpaulin		
(4) Max. lbs. a.i./Acre	332 lbs. a.i./A	332 lbs. a.i./A
(5) Max. gal/Acre **(5) = (4)) (3)**	34.98 gal/A	33.70 gal/A

Calculations	**Telone® C17**	**Telone® C35**
(1) Weight/gallon[2]	10.6 lbs.	11.2 lbs.
(2) % 1,3-D/gallon[2]	78.3%	61.1%
(3) Amt. 1,3-D/gallon[3] (3) = (1) x (2)) 100	8.29 lbs.	6.84 lbs.
Maximum Application Rates With or Without a Tarpaulin		
(4) Max. lbs. a.i./Acre	332 lbs. a.i./A	332 lbs. a.i./A
(5) Max. gal/Acre **(5) = (4)) (3)**	40.05 gal/A	48.54 gal/A

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[2] Information for steps 1 and 2 can be found on the product label.
[3] Information for step 3 may or may not be on the product label, but can be calculated from steps 1 and 2. Maximum lbs. a.i./Acre in step 4 has been predetermined by the Department of Pesticide Regulation. Maximum gal/A in step 5 must be calculated by the applicator.

Mechanical Soil Injection, Continued

Calculating the ATP of 1,3-D When Applying By Mechanical Soil Injection

The ATP for each application shall be calculated based on the following:

1) The TG of the pesticide formulation;
2) The pounds per gallon (lbs./gal) for the pesticide formulation;
3) The percent by weight (XX%) of 1,3-D in the pesticide formulation, expressed as a decimal (.XX);
4) The TP of 1,3-D; and
5) The AF as determined above.

The ATP for each application shall be calculated using the following formula:

TG x lbs./gal x (.XX) x AF.

Convert the 1,3-D percentage by weight (XX%) to a decimal, divide XX% by 100 = .XX
To find the TP, multiply, TG x lbs./gal x (.XX) = TP
To find the ATP, multiply, TP x AF = ATP.

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Drip Application Systems

Drip Application Method	Users shall comply with the following conditions/requirements when applying 1,3-D through drip application systems. This section applies to InLine™ and Telone™ EC only.
Application Timing and Corresponding Application Factor	Drip irrigation applications on soil surface or buried drip application shall use an AF of 1.16, regardless of depth. Application Time and Area • Generally, applications are allowed statewide during the entire year. However, applications shall not occur in the San Joaquin Air Basin during January and December of each calendar year.
Calculating the ATP of 1,3-D When Applying By Drip Application Systems	The ATP for each application shall be calculated based on the following: 1. The TG of the pesticide formulation; 2. The pounds per gallon (lbs./gal) for the pesticide formulation; 3. The percent by weight (XX%) of 1,3-D in the pesticide formulation, expressed as a decimal (.XX); 4. The TP of 1,3-D; and 5. The application factor (1.16 AF). The ATP for each application shall be calculated using the following formula: TG x lbs./gal x (.XX) x 1.16 AF Convert 1,3-D percentage by weight (XX%) to a decimal, divide XX% by 100 = .XX To find the TP, multiply, TG x lbs./gal x (.XX) = TP To find the ATP, multiply, TP x 1.16 AF = ATP.

cc: Mr. Daniel J. Merkley, Agricultural Commissioner Liaison
Mr. Paul H. Gosselin, DPR
Mr. Ron Oshima, DPR
Mr. Scott Paulsen, DPR
Dr. John S. Sanders, DPR
Mr. Chuck Andrews, DPR
Dr. Bruce Johnson, DPR
Ms. Nancy Grussing, DPR